

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

### A Pyrophoric Pocket Lighter.

We, the firm of BRUCHHAUS AND BALTRUSCH, Elberfeld, Germany, a German firm, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a pocket lighter with a chisel-like or scoop-like scraper mounted on the combustible container and pyrophoric element mounted on the removable closing cap.

In known lighters of this kind the pyrophoric element is mounted in a separate holder exchangeably attached to the cap. Both holder and pyrophoric element project to some extent from the wall of the cap, which arrangement is not only unsightly but has the drawback that, owing to the sharp edges of the holder the lining of the pocket is damaged or gets torn. Moreover, in many cases, owing to the defective fastening method of the holder the pyrophoric element easily gets lost.

These drawbacks are obviated by the pocket lighter according to the present invention in that the pyrophoric element is mounted in a downwardly opening intermediate chamber or longitudinal channel located between the two walls of the double-walled cap, the outer of which walls has a window-like opening for exposing the operative face of the pyrophoric element. The latter is no longer positioned on the outside of the wall of the cap, but inside the latter, whereby the lighter has a perfectly closed form and at the same time damage to the pocket-lining is avoided. In addition, the pyrophoric element is safeguarded against loss, and finally the separate holder for the element is dispensed with.

The longitudinal channel for receiving the pyrophoric element is conveniently formed of a groove pressed into the inner wall of the cap, so that the outer wall of the latter need be pressed outwardly

only little or not at all from its normal level. The pyrophoric element and the groove in the cap-wall containing said element conveniently have the cross-section of a segment of a circle, the flat surface of the element constitutes the operative face. In contradistinction to the usual cross-section of pyrophoric element, this has the advantage that the element can be used up almost completely whereas in the known rectangular and dove-tail sections always very large unusable waste or residue remains behind.

In order to remove the pyrophoric element with little trouble from the chamber between the two walls of the cap when the worn element is to be replaced by a fresh one, the upper or narrow edge of the window in the outer cap-wall is bent inwardly so that it constitutes a stop for the pyrophoric element when the latter is pushed from below into the channel. The element can then be pushed downwardly by means of a sharp implement *e.g.* the edge of a knife, inserted between the edge of the window and the upper edge of the pyrophoric element.

An embodiment of the invention is shown by way of example in the accompanying drawing, wherein

Fig. 1 is a longitudinal section of the combustible container and the cap (shown removed),

Fig. 2 a side view of the cap, and

Figs. 3, 4 are horizontal sections of cap and upper end of said container respectively.

The rectangular combustible container which is as usual filled with an absorbent material *e.g.* wad, adapted to receive an easily inflammable liquid for example, benzine, comprises in known manner two sheet metal socket-like casings *a* and *b* with their open ends engaging the one into the other. The wick-tube *c* soldered into the top of the casing *a* is provided with a scoop-like or chisel-like scraper of

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steel *d* which is secured in known manner  
*e.g.* by being firmly pressed in. The  
double-walled cap comprises two sheet  
metal caps *f*, *g* of rectangular cross-section,  
the closed end of the one being  
pressed into the closed end of the other.  
On one of the narrow sides of the cap an  
inwardly extending curved groove *h* is  
pressed into the inner wall *f* of the cap,  
the wall of which groove engages in a  
second groove *o* in the casing *a* of the  
container when the cap is put on. Owing  
to the groove *h* being pressed into the  
inner wall *f* of the cap there is formed  
between said wall and the outer wall *g*  
a longitudinal channel, which, according  
to the invention, serves to receive the  
pyrophoric element *i*, which consists for  
example of a piece of cerium-iron, the  
latter being pushed into said channel  
from the lower or open end of the cap.  
On the same narrow side of the cap, the  
outer wall of the latter has a window-  
like opening *p*, through which the opera-  
tive face of the pyrophoric element is  
exposed. The latter, and correspondingly  
with it the channel receiving it, have  
each the cross section of a segment of a  
circle, so that the element can be used  
up almost completely, *i.e.* without waste.  
The upper edge *q* of the window-like  
opening *p* cut in the outer cap-wall is  
bent inwardly at a right angle, so that  
it serves as stop for the pyrophoric ele-  
ment *i*. In that way the element can be  
pushed out downwardly with little  
trouble by means of an implement  
inserted between the edge *q* and upper  
edge of the element *i* when it is necessary  
to supply a fresh pyrophoric element.  
The invention is not limited to the  
embodiment shown, but covers many  
modifications therein or thereof.

Having now particularly described and  
ascertained the nature of our said inven- 45  
tion and in what manner the same is to  
be performed, we declare that what we  
claim is:—

1. A pyrophoric pocket lighter with  
chisel-like or scoop-like scraper mounted 50  
on the combustible container and a pyro-  
phoric element on the removable closing  
cap, characterised by the pyrophoric ele-  
ment being mounted in a downwardly  
opening intermediate chamber or longi- 55  
tudinal channel located between the two  
walls of the double-walled cap, the outer  
of which walls has a window-like opening  
for exposing the operative face of the  
pyrophoric element. 60

2. A pyrophoric pocket lighter accord-  
ing to Claim 1 characterised by the pyro-  
phoric element being mounted in a longi-  
tudinal channel formed by pressing a  
groove in the inner wall of the cap. 65

3. A pyrophoric pocket lighter accord-  
ing to Claim 1 characterised by the upper  
edge of the window-like opening cut out  
of the outer cap wall being bent inwardly  
and constituting a stop for the pyrophoric 70  
element when pushed from below into  
the channel.

4. A pyrophoric pocket lighter accord-  
ing to Claim 1 characterised by the pyro- 75  
phoric element having the cross-section  
of a segment of a circle, the flat surface  
constituting the operative face.

5. A pyrophoric pocket lighter con-  
structed or adapted for operation sub- 80  
stantially as described with reference to  
the accompanying drawing.

Dated this 10th day of April, 1924.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1

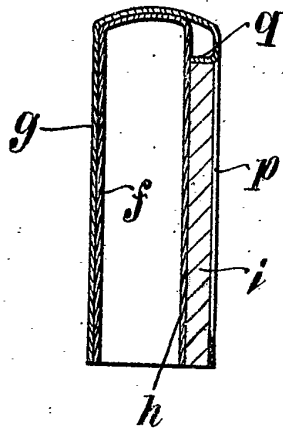


Fig. 2

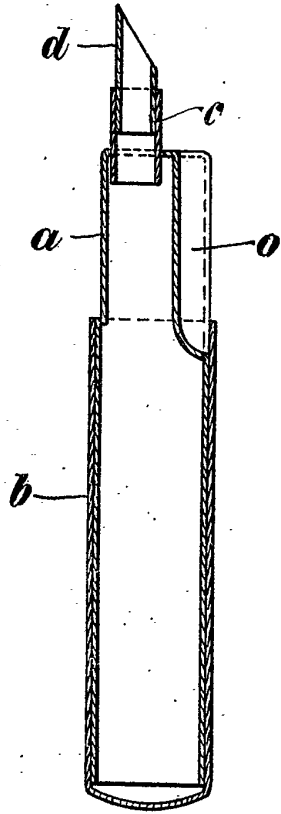
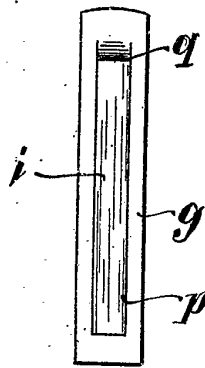


Fig. 3

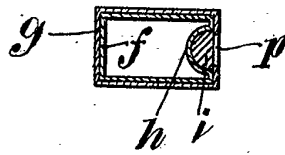


Fig. 4

